

PR 92-273

WISCONSIN 800 MHz

F.C.C. REGION NUMBER 45

ORIGINAL
FILE

REGIONAL PLAN

RECEIVED

AUG 14 1992

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY



TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
LIST OF APPENDICES.....	iii
PREFACE.....	iv
THE REGION	
Establishment of Regional Boundaries.....	1
Preliminary Organization.....	2
(Table #1).....	3
(Figure #1).....	5
Notification of Eligibles.....	6
Formation of the Planning Committee.....	7
Regional Plan Review Committee (RPRC).....	8
Coordination with Adjacent Regions.....	9
Conformity with the National Plan.....	10
Review Prior to Submission.....	10
Authority.....	11
NEEDS ANALYSIS.....	12
APPLICATIONS	
Application Review.....	14
Application Procedures.....	14
Information Required.....	15
Application Evaluation.....	16
Eligibility.....	17
Appeal Process.....	17
SPECTRUM UTILIZATION	
Trunking.....	19
Coverage Area.....	19
Adjacent Channel Assignments.....	20
Co-channel Assignments.....	20
Channel Loading Criteria.....	21
Vacated Frequencies.....	22
Initial Spectrum Allocation.....	23
TECHNICAL DESIGN CONSIDERATIONS	
Channeling Plan.....	24
Interoperability With Adjacent Lower Bands.....	24
System Design.....	25
Data Transmission.....	25
Cellular Radio Technology.....	25
Mobile Satellite Service (MSS).....	26
Aircraft to Ground Communications.....	26
INTEROPERABILITY CONSIDERATIONS	
Intersystem Interoperability.....	28

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
INTEROPERABILITY CONSIDERATIONS (cont.)	
Common Channels.....	28
(Table #2).....	29
Primary Dispatch Center.....	30
Calling Channel.....	31
Tactical Channels (TAC 1 Through TAC 4).....	32
Cross System Patches.....	33
IMPLEMENTATION	
Implementation Schedules.....	34

LIST OF APPENDICES

- Appendix A: Convening Meeting Notice
- Appendix B: Meeting Minutes
- Appendix C: Attendees
- Appendix D: Regional Plan Review Committee (RPRC)
- Appendix E: Application Criteria
- Appendix F: Spectrum Allocation Methodology
- Appendix G: Frequency Assignments
- Appendix H: Glossary
- Appendix I: Letters of Concurrence From Adjacent Regions

PREFACE

In December 1983, the United States Congress directed the Federal Communications Commission (FCC) to establish a plan to ensure that the communications needs of state and local public safety authorities would be met for the future. The Commission issued a Notice of Inquiry on March 7, 1984 and evaluated over three hundred comments from the public safety community and other interested parties.

These comments formed the basis for a Staff Report issued by the Commission's Private Radio Bureau on August 1, 1985. This report suggested various methods of meeting the communications needs of public safety. One option included was the allocation of additional frequencies at 821-825 MHz and 866-870 MHz.

The Commission issued an allocation order on September 19, 1986. Six megahertz of spectrum were selected in the 821-824 MHz and 866-869 MHz bands since they were adjacent to frequencies already being used for public safety purposes. However, while the Commission made this allocation, it also stipulated that the frequencies could not be used until a National Plan for spectrum utilization was adopted.

The Commission then established the National Public Safety Planning Advisory Committee (NPSPAC) in December, 1986. This committee had open membership and all interested parties were

invited to participate in its meetings. The Commission charged NPSPAC with the following tasks:

1. Identify communications requirements of public safety agencies.
2. Develop a scheme for efficient use of the new frequencies.
3. Develop a scheme to increase the utility of existing public safety frequencies.
4. Recommend the manner in which new technologies can be applied to public safety frequencies.
5. Recommend guidelines to ensure compliance with the National Plan.

NPSPAC submitted its Initial Report to the Commission on March, 1987. On May 15, 1987, the Commission issued a Notice of Proposed Rule Making proposing policies and rules for the National Plan. NPSPAC then issued its Final Report in September, 1987. On December 18, 1987 the Commission released a Report and Order regarding the development and implementation of a Public Safety National Plan. (General Docket No. 87-112).

In its introductory comments the Commission expresses its

belief that "while certain technical concerns must be addressed at the national level, the great diversity of needs in different areas of the country demand that input also be obtained at the State and Local levels." Thus, the United States was divided into Regions, primarily along State boundaries. A few large metropolitan areas petitioned for status as independent Planning Regions. The Commission subsequently granted this Petition and established fifty-five regions.

This document constitutes the Public Safety Communications Plan for Region No. 45: The Wisconsin Planning Region. It addresses the unique spectrum allocation requirements of public safety and other eligible authorities throughout the State of Wisconsin.

This plan is respectfully submitted to the Commission this 10th day of August, 1992 in conformance with the National Plan.

Richard Shulak, P.E.

Chairman

T H E R E G I O N

ESTABLISHMENT OF REGIONAL BOUNDARIES

For Public Safety Communications purposes, the Wisconsin Region (the Region) is the geographic area of the State of Wisconsin, excluding the eleven southeastern counties of Dane, Dodge, Jefferson, Kenosha, Milwaukee, Ozaukee, Racine, Rock, Walworth, Washington and Waukesha, which are a part of the Southern Lake Michigan Region.

The Wisconsin Region is comprised of sixty-one counties within the State of Wisconsin. Its approximately two and one-half million people represent a significant portion of the Nation's population.

Protecting the lives and property of these persons is a function of hundreds of Public Safety and Special Emergency agencies which are operated or regulated by a multitude of various political jurisdictions. Personal mobility and the proximity of communities in today's rural and metropolitan areas demand cooperation and coordination among these agencies. Mobile and portable radios provide the means for the myriad agencies involved to communicate with each other.

Radio communications also provide the means for each agency to accomplish its own individual, day-to-day operations. These communications must be reliable and free from interference from neighboring agencies. Therefore, frequencies must be assigned to agencies throughout a given area in a manner that makes inter-agency communication possible but prevents inter-agency interference.

Other issues to be considered when determining what area should comprise a Planning Region are: the continuing urbanization of outlying counties, the sophistication of radio technology, and most importantly, the amount of radio spectrum available to public safety agencies throughout the area.

Final boundaries for the Wisconsin Region, along county lines, were drawn as a result of the boundaries defined as the Southern Lake Michigan Region. This region includes eleven of the southeastern counties in the State of Wisconsin. The remaining Sixty-one counties which comprise the Wisconsin 800 MHz Planning Region are listed in Table 1, and shown in Figure 1.

PRELIMINARY ORGANIZATION

Monthly meetings for the planning process began in April of 1989. Deliberations on administrative and technical questions

TOTAL POPULATION PROJECTIONS BY COUNTY AND YEAR¹

	1980	1985	1990	1995	2000	2005	2010	2015	2020
ADAMS	13457	14660	15633	16687	17747	18839	19957	20874	21354
ASHLAND	16783	16934	17347	17721	18008	18250	18511	18774	18980
BARRON	38730	41022	42805	44331	45396	46287	47262	48241	48953
BAYFIELD	13822	13857	14344	14825	15233	15603	16029	16466	16766
BROWN	17580	185556	195793	205861	214987	223417	231548	238949	245077
BUFFALO	14309	14153	14440	14702	14850	14904	14918	14895	14814
BURNETT	12340	12898	13577	14269	14958	15690	16516	17255	17754
CALUMET	30867	33403	36143	39098	41932	44637	47366	49931	52006
CHIPPEWA	52127	53662	55932	58136	60013	61600	63077	64382	65348
CLARK	32910	32860	33636	34261	34499	34477	34400	34350	34279
COLUMBIA	43222	43581	45435	47283	48898	50312	51669	52822	53583
CRAWFORD	16556	16672	16878	17021	16983	16832	16672	16533	16385
DOOR	25029	26191	27420	28520	29476	30462	31577	32642	33420
DOUGLAS	44421	42750	42341	41917	41430	40952	40460	39921	39376
DUNN	34314	35292	36060	37175	38470	39935	41451	42931	44422
EAU CLAIRE	78805	83695	88362	93530	98954	104614	110295	115479	119856
FLORENCE	4172	4307	4456	4607	4728	4823	4913	4994	5037
FOND DU LAC	88964	90119	92017	93702	94871	95698	96313	96675	96780
JREST	9044	9368	9741	10161	10517	10793	11035	11254	11409
GRANT	51736	52192	52990	53887	54668	55325	55840	56179	56379
GREEN	30012	30453	31099	31627	31935	32098	32180	32223	32242
GREEN LAKE	18370	19121	19824	20487	21062	21578	22109	22575	22887
IOWA	19802	20158	20829	21412	21750	21876	21944	22021	22029
IRON	6730	6418	6194	5953	5690	5443	5219	5018	4825
JACKSON	16831	16875	16954	16995	16929	16781	16587	16344	16036
JUNEAU	21037	21870	22740	23581	24310	24970	25643	26218	26540
KEWAUNEE	19539	20155	20836	21414	21793	22038	22248	22434	22541
LA CROSSE	91056	96632	100876	105275	109564	113958	118352	122348	125694
LAFAYETTE	17412	17412	17631	17763	17691	17485	17282	17112	16931
LANGLADE	19978	20281	20553	20801	20906	20892	20843	20743	20536
LINCOLN	26555	26813	27348	27831	28071	28090	27991	27803	27540
MANITOWOC	82918	82888	83242	83354	82871	82006	81036	80036	78965
MARATHON	111270	111807	114811	117301	118929	120010	120750	121186	121403
MARINETTE	39314	40268	41289	42093	42553	42854	43178	43472	43603
MARQUETTE	11672	12638	13261	13879	14464	15044	15692	16274	16633

TABLE # 1

TOTAL POPULATION PROJECTIONS BY COUNTY AND YEAR¹

	1980	1985	1990	1995	2000	2005	2010	2015	2020
MENOMINEE	3373	3835	4395	4978	5516	6005	6496	6983	7400
MONROE	35074	36233	37875	39498	40867	42055	43189	44209	44953
OCONTO	28947	30370	31653	32951	34032	34950	35833	36581	37050
ONEIDA	31216	32529	33990	35425	36569	37472	38267	38879	39140
OUTAGAMIE	128730	134460	140816	146406	150711	154201	157409	160185	162116
PEPIN	7477	7483	7587	7692	7709	7671	7619	7585	7552
PIERCE	31149	32186	33949	35882	37844	39837	41805	43611	45135
POLK	32351	34991	36991	39023	40923	42792	44804	46742	48272
PORTAGE	57420	61436	64403	67649	70987	74310	77514	80342	82690
PRICE	15788	16330	16895	17479	18024	18545	19083	19548	19845
RICHLAND	17476	17292	17349	17329	17189	17001	16849	16716	16537
RUSK	15589	15549	15912	16206	16365	16444	16489	16496	16425
ST CROIX	43262	46549	50177	53795	57030	59992	62878	65520	67704
SAUK	43469	45788	47586	49378	50969	52378	53663	54683	55302
SAWYER	12843	13763	14780	15985	17217	18436	19717	20915	21796
SHAWANO	35928	36764	37723	38676	39374	39844	40193	40420	40478
SHEBOYGAN	100935	102273	104253	105820	106749	107315	107706	107865	107689
TAYLOR	18817	19504	20317	21023	21454	21688	21873	22060	22177
EMPEALEAU	26158	26675	27417	28194	28834	29271	29580	29803	29977
VERNON	25642	26303	26946	27436	27630	27627	27591	27558	27426
VILAS	16535	17415	18483	19730	21048	22435	23943	25299	26088
WASHBURN	13174	14172	15178	16174	17123	18133	19290	20383	21195
WAUPACA	42831	44776	46428	48124	49663	51111	52550	53827	54787
WAUSHARA	18526	19625	20594	21659	22747	23863	25033	26011	26540
WINNEBAGO	131772	136135	139970	143321	146040	148462	150669	152318	153250
WOOD	72799	75482	77993	80105	81465	82383	83139	83767	84188
TOTAL STATE	2,178,965	2,414,879	2,502,497	2,587,398	2,659,215	2,722,794	2,784,045	2,837,660	2,876,095

¹ Wisconsin Department of Administration Demographic Services Center, Wisconsin Population Projections 1980-2020, 5th. ed., June 1988.

TABLE # 1

WISCONSIN 800 MHZ PLANNING REGION

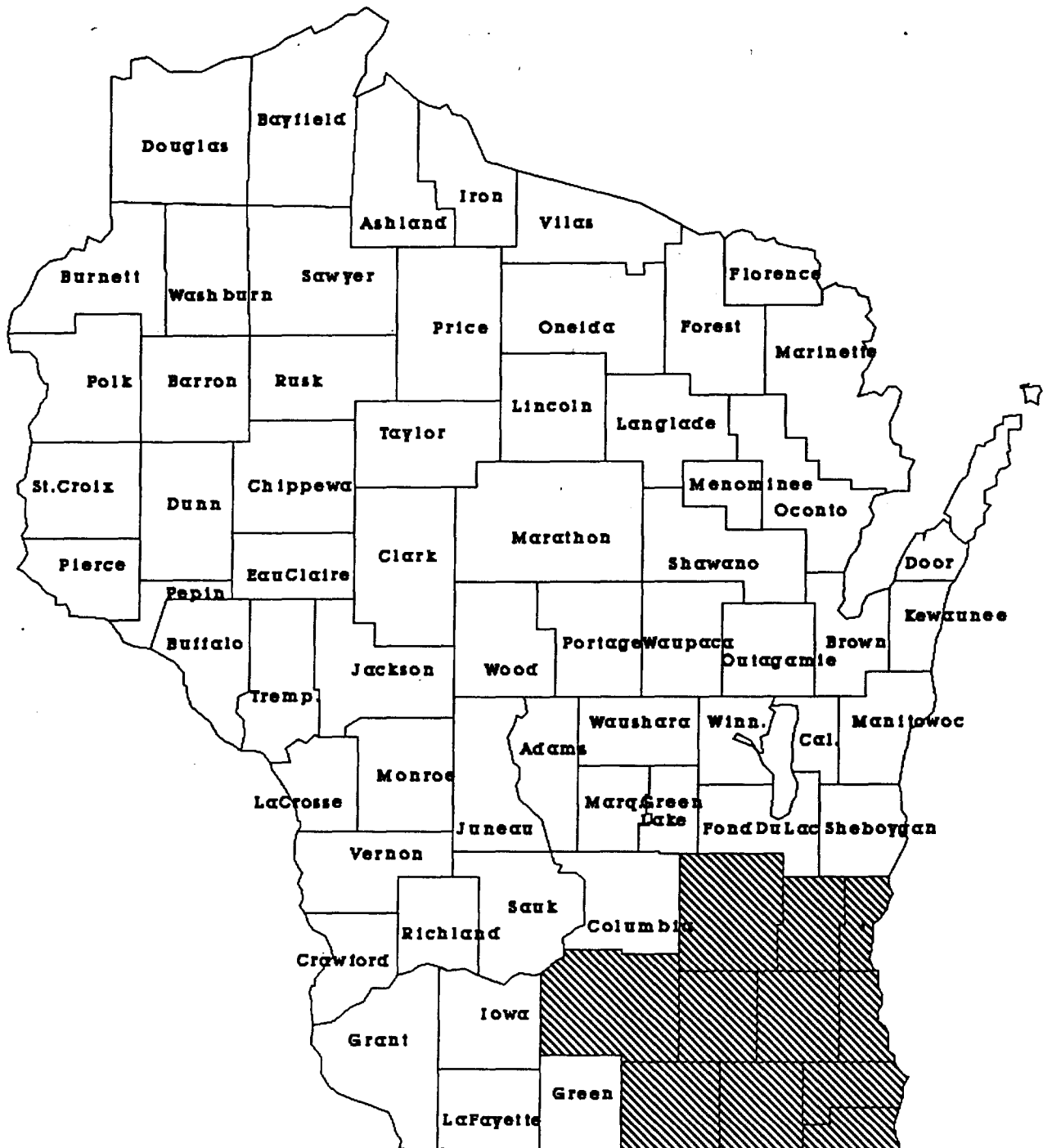


Figure 1

began at that time, using the Regional Planning Tasks published by NPSPAC as a functional basis for organizing small work groups. Thus, much of the groundwork had already been done prior to the formal creation of the Region.

In July, 1988, two individuals were designated by the Associated Public-Safety Communications Officers, Inc. (APCO) as Co-Convenors for the Region: Richard Shulak of Wisconsin DOT - State Patrol Communications and Carl Guse of the Dodge County Sheriff's Department (Wisconsin APCO Frequency Coordinator). They then prepared and published an announcement of the first official meeting for persons interested in participating in the planning process.

NOTIFICATION OF ELIGIBLES

In General Docket No. 87-112, the FCC declared that since the Public Safety Radio Service and the Special Emergency Radio Service both play important roles in public safety, it is necessary to make both services eligible to operate in the 821-824/866-869 MHz bands. While recognizing that it may not be possible to grant requests for assignments to everyone, the Commission did conclude that membership on regional planning committees must be open to representatives from all potential user groups.

In accordance with the Report & Order, the Wisconsin Planning Region took the below listed steps to ensure that its membership was open to as broad a range of eligible participants as possible.

1. On February 22, 1989 the State of Wisconsin mailed the Announcement of the Initial Meeting to individual public safety agencies as well as professional organizations and associations of all eligible user groups. Notices were also mailed to Communications magazine, the Federal Emergency Management Agency and the Federal Communications Commission. The Announcement of Initial Meeting and the mailing list are contained in Appendix A.

2. On April 7, 1989 an Announcement of Initial Meeting notice was sent to the State of Wisconsin Law Enforcement Bulletin which is distributed to ALL Wisconsin Law Enforcement Agencies.

FORMATION OF THE PLANNING COMMITTEE

On April 28, 1989 a first official meeting of the Wisconsin 800 MHz Regional Planning Committee (the Committee) was held in Fond du Lac, Wisconsin. Mr. Richard Shulak was elected Chairman of the Committee and Mr. Richard Buggs volunteered to act as Secretary.

The agendas and minutes of this meeting and of all meetings succeeding it are included in Appendix B. Appendix C contains the names, affiliations, mailing addresses and phone numbers of meeting attendees.

REGIONAL PLAN REVIEW COMMITTEE (RPRC)

The Committee realizes that its work does not end with the submission of this Plan (e.g. future modifications to the Plan may be required, applications for radio systems proposed within the Region will need to be reviewed for compatibility with the Plan, implementation of these systems will require monitoring, and coordination with the National Plan will continue). Obviously, there must be a mechanism by which future tasks can be accomplished.

To provide this mechanism, the Committee of the Whole has established the Regional Plan Review Committee (RPRC) (See Appendix D). This committee will be composed of the Regional Planning Committee Chairman who will act as chair, the Frequency Advisory Committee Chairman and the chairs of the Regions three standing committees (Operational, Technical and Administrative). The RPRC will convene upon the Commission's approval of this Plan.

COORDINATION WITH ADJACENT REGIONS

There are seven planning regions which will be affected by the Wisconsin Plan. They consist of the Southern Lake Michigan Region (Region 54), the balance of Illinois (Region 13), Indiana (Region 16) and Michigan (Region 21) not included in Region 54, and the States of Minnesota (Region 22) and Iowa (Region 17).

In order to assure mutual cooperation and coordination with these surrounding Regions, the Wisconsin Region has taken the following steps:

- (1) Identified the regions
- (2) Assigned committee members from the Wisconsin Region to attend regional committee meetings in the regions.
- (3) Mailed meeting notifications to each region's chairperson.
- (4) Attended their region planning committee meetings when possible.
- (5) Sent plan to adjacent regions for their review and comments. (See Appendix I)

Communication among regions has thus been ever present during the drafting of this Plan. Implementation of each of the adjacent regional plans should likewise be coordinated through the mutual membership and cooperation of the planning committees.

CONFORMITY WITH THE NATIONAL PLAN

It is the expressed intent of the Committee to conform with the requirements of the National Plan as defined in paragraphs 11-40 of General Docket No. 87-112. This Plan is submitted to the Commission subject to the review process described in the Report and Order.

REVIEW PRIOR TO SUBMISSION

As work progressed on the Regional Planning Tasks, three subcommittees were formed to address issues relating to Administrative, Technical, and Operational matters. Sergeant Donald Sleik of the Winnebago Sheriff's Department chaired the Administrative subcommittee, Mr. Dan Eklof chaired the Technical subcommittee and Sergeant John Lampkin of the Green Bay Police Department chaired the Operations subcommittee. They codified their suggestions and wrote draft proposals on individual topics. After reaching a consensus within the subcommittee, their proposals were submitted to the Committee of the Whole for review

and approval. A majority vote by attending members was required for acceptance.

Upon acceptance of its content by the Committee, each draft was then forwarded to the Administrative subcommittee for collation. The complete final draft was then presented to the Committee of the Whole for a page by page review.

AUTHORITY

The Wisconsin 800 MHz Regional Planning Committee derives its authority to carry out activities required for composition and implementation of this Plan from the Federal Communications Commission's Report and Order General Docket No. 87-112 released on December 18, 1987.

N E E D S A N A L Y S I S

The Report & Order specifies that regional plans explain how the requirements of all eligible entities were considered. This section of the Plan describes how this specification has been met.

The regional plan for radio spectrum usage by public safety and other eligible entities in the area of Wisconsin not affected by the Southern Lake Michigan 800 MHz Regional Plan was drafted and assembled by the Wisconsin 800 MHz Regional Planning Committee.

The Wisconsin Regional Plan has been reviewed by committee representatives from participating eligibles who represent communications interests in the respective counties encompassed by the plan to ensure that Public Safety and other eligible entities had opportunity to participate in the development of the plan.

In accordance with Docket 87-112, the Associated Public Safety Communications Officers, Inc. (APCO) recommended to the FCC the appointment of a "Convenor" for the Wisconsin Region. Following statewide public notification to eligible entities, the

first meeting of interested parties was held in Fond du Lac, Wisconsin on April 28, 1989. At this meeting, the Regional Chairman was elected and a secretary appointed. Three standing committees were formed: Operations, Administrative and Technical.

Due to the expansive geographic area of the Wisconsin Region, travel distances and travel constraints precluded large-scale, joint regional meetings of eligibles. Therefore, in order to fulfill the intent of Docket 87-112 and attain the best possible statewide representation, the regional chairman and committee chairs (Administrative, Operations and Technical) traveled to key regional areas to hold meetings with local representatives.

A P P L I C A T I O N S

This section of the Plan describes the procedures for applying for a license to operate a radio system in the new spectrum; as well as, the process by which that application will be evaluated. Applications shall be submitted to the local frequency coordinator. The application shall be forwarded to the RPRC chair person. It is the intention of the RPRC to meet within thirty (30) days of the the date of the Commission's approval of this Plan.

APPLICATION REVIEW

Applications for licenses in the 821-824/866-869 MHz band will be subject to review by the RPRC. This review is required prior to formal submission of the application to the national APCO frequency coordination office. Applications may be rejected at the Regional level for non-conformance with this Plan.

APPLICATION PROCEDURES

Applications will be submitted to the local Frequency Advisory Committee Chairman. The Frequency Advisory Committee Chairman will review the application packet for completeness and

verify the eligibility of the applying organization. Incomplete applications or applications from agencies which are not considered by this Plan to be eligible for the limited spectrum will be returned to the applicant with the appropriate remarks. Copies of complete applications received from eligible public safety entities will be forwarded to the RPRC for evaluation.

INFORMATION REQUIRED

The current standardized APCO Frequency Coordination and FCC License Application forms will be used. In addition, the applicant will be required to furnish supplemental information in specific categories. These categories are enumerated (and briefly defined) on the following page. Each category has been assigned a numerical weight for application evaluation purposes. Category weights are contained in Appendix E.

1. Service --- what tasks or duties the agency is charged with accomplishing.

2. System Type --- In narrative form, a description of the radio system being proposed (trunked, conventional, voice, data, voice/data combined, etc.)

3. Intersystem Interoperability --- How agents of the applying organization will communicate with agents of different organizations.

4. Channel Loading Factors --- Equipment inventory totals, and the maximum number of mobile radios potentially in use at a given time.

5. Coverage Area --- Details of an engineering survey showing the radio coverage required for minimum coverage of jurisdictional boundaries.

6. Vacated Frequencies Returned --- Which frequencies the agency will release.

7. Implementation Schedule --- An explanation of any budgetary commitment and a proposed time frame for putting equipment into service.

The RPRC may request additional information any time during review to assist in evaluation.

APPLICATION EVALUATION

The Regional Plan Review Committee (RPRC) will review each application for its conformity to this Plan. Evaluations will be

based upon the seven factors mentioned above. A final point total will be determined by adding the points earned in each category as listed in Appendix E. The RPRC will base their recommendation for approval or rejection of the application upon the final point total.

Once an application has been reviewed it will be returned to the applicant for the appropriate action (e.g., filing, additional information required, modification, etc.).

ELIGIBILITY

Agencies applying for frequencies in the 821-824 and 866-869 MHz band will be prioritized according to the degree that the service(s) they provide is fundamental to the protection of life and property. Only Public Safety and Special Emergency Radio Service agencies are eligible to apply for a license in the 821-824/866-869 MHz band.

APPEAL PROCESS

Throughout the frequency allocation process, applicants are given opportunities to appeal decisions which have caused rejection of their application. The appeal process has three levels:

1. The Regional Plan Review Committee
2. Associated Public Safety Communications Officers, Inc.
3. The Federal Communications Commission

An applicant who decides to appeal a rejection should initiate that appeal immediately upon notification of the rejection. In the event that an appeal reaches the third level (FCC), the Commission's decision will be final and binding upon all parties.